

REMARKS

Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the amendments above and the remarks below.

Claim 17 has been amended to include the formula of the linear polymers that are directly obtained with the compound of formula (9a). Support for these claims amendments can be found in the specification at page 18.

No new matter has been added.

Applicants appreciate the Examiner's indication that claims 25-26 would be allowable if rewritten in independent form including all of the limitations the base claim and any intervening claims. However, before rewriting such claims, applicants continue to submit that all of the pending claims are allowable over Galbiati U.S. Patent No. 6,221,994 for the reasons discussed below.

Section 102 and 103 Issues

As recited in amended independent claim 17, and claims 18-30 which are dependent thereon, the invention is directed to mono component hydrosetting sealants containing as the base compound a silane terminated polymer obtained by addition reaction between an organic derivative of silicon and the terminal functional groups of linear or branched polymers obtained by the Michael polyaddition reaction of sulphydric acid (H_2S) with organic compounds. The organic compounds can contain a repeating unit and hence have variable molecular weight, which have at least two alkenyl double bonds activated by the presence, in the alpha position with respect to each alkylenic bond, of an electronegative group and include $W'[-C(R^7)=CH_2]_2$ (9), $Q[-W-C(R^7)=CH_2]_2$ (9a), $Q[-W-C(R^7)=CH_2]_3$ (9b), or $Q[-W-C(R^7)=CH_2]_4$ (9c). W' is an electron-attractor group ($-SO-$, $-SO_2-$, $-O-$, $-CO-$), W is also an electron-attractor group ($-SO-$, $-SO_2-$, $-O-$, $-CO-$, $-O-CO-$), R^7 is $-H$ or $-CH_3$, and Q is a divalent, trivalent or tetravalent group of hydrocarbon radicals, hetero-hydrocarbon radicals, polyethers, or polyesters.

It is submitted that the present invention is not anticipated by Galbiati. Anticipation is but the ultimate or epitome of obviousness. To constitute anticipation,

all material elements of a claim must be found in one prior art source. In re Marshall, 577 F.2d 301, 198 USPQ 344 (CCPA 1978).

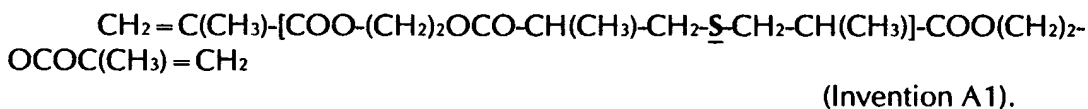
Applicants continue to submit that the claimed end-product is different, and made from a different process, than that disclosed in Galbiati. Again, the Michael polyaddition reactant disclosed in Galbiati is an organic compound, namely a dithiol of formula HS-R'SH, whereas the Michael polyaddition reactant of the present invention is an inorganic compound, namely, H₂S.

However, to further distinguish the present invention over that of Galbiati the claims now include the linear polymers directly obtained with the compound of formula (9a), which has a preferred embodiment of formula (10) (claim 22) having a specific and preferred organic compound (11) (claim 23). Therefore, depending on the excess of reactant (9a) with respect to H₂S, or vice versa, it is respectively possible to obtain the claimed reaction products of formula (9a') or (9a''). Analogously, claimed reaction products (9') and (9'') can be obtained by reacting an excess of the compound of formula (9) with respect to H₂S, or vice versa.

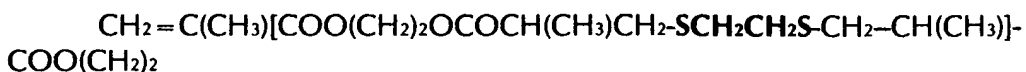
In comparing the differences between the presently claimed reaction products over that of Galbiati, when the organic compound (11) has R⁷=CH₃, R¹⁰= -CH₂-CH²- and n'=1, it coincides with the specific compound disclosed in Galbiati at column 7-8 after line 27 having the formula:



In accordance with the invention, when in excess of (n + 1 moles) of this compound (A) are reacted with n moles of inorganic H₂S, the following linear polymer is obtained:



However, when in excess of (n + 1 moles) of this same compound (A) are reacted with the organic reactant of Galbiati, namely, n moles of 1,2-ethane-thiol, the following linear polymer is obtained:



(Galbiati A2).

In comparing the above linear polymer of the invention (Invention A1) against the linear polymer of Galbiati (Galbiati A2), it is evident the end products are **different** since the linear polymer of Galbiati A2 includes **-SCH₂CH₂S-**, whereas the linear polymer of the invention A1 includes the single **-S-** unit. The linear polymer of the invention (Invention A1) falls within the definition of the formula (9a') of the amended claim 17 when R' = CH₃, Q = R⁸ = (OR¹⁰)_{n'} wherein R¹⁰ = -CH₂CH₂-, n' = 1, W = CO.

Similarly, in accordance with the invention, when (n+1 moles) of inorganic H₂S are reacted with n moles of compound (A), the following linear polymer is obtained:



(Invention A3).

However, in accordance with Galbiati, when (n+1 moles) of 1,2-ethane-thiol are reacted with n moles of compound (A), the following linear polymer is obtained:



(Galbiati A4).

Again, the end-product of the invention is **different** from that of Galbiati, since the linear polymer of Galbiati A4 includes the double **-S-** atoms in **SCH₂CH₂S**, whereas the linear polymer of the invention A3 includes the single **-S-** atom. Again, this linear polymer of the Invention A3 falls within the definition of the formula (9a') of the amended claim 17 when R' = CH₃, Q = R⁸ = (OR¹⁰)_{n'} wherein R¹⁰ = -CH₂CH₂-, n' = 1, W = CO.

Further, the present Specification clearly points out this essential difference between the present invention and the Galbiati patent. As is recited at page 21, lines 4-14:

"With the present invention the structure of the repeating structural unit is therefore modified since only a single sulphur atom is present in the beta position of the two activating groups, and the organic portion present between two sulphur atom (as disclosed by Galbiati) is eliminated, that is clarified by the following structures:

-X'-C-C^β-S-R-S-C^β-C-X'- (US 6,221,994-Galbiati)

-X'-C-C^β-S-C^β-C-X'-(present invention)..."

In view of the foregoing, it is submitted that amended claim 17, and as such dependent claims 18-30, clearly identifying the reaction end products (9a') and (9a"), (9') and (9"), which are neither anticipated by nor obvious over Galbiati

Applicants would also like to point out that the definitions given for the electron attracting group W and W' of the reactants (9) and (9a), clearly exclude the possibility that these constituents are -S-. In fact, W is selected from -O-, CO, O-CO-, SO, SO₂, but it never contemplates the meaning of - S- or - S*-CH₂-CH₂-S*-. It is also pointed out that, in the Michael addition reaction end products, the W and W' maintain the same meaning of the reactants, in other words, if, for example, W=CO in the reactant, in the corresponding reaction end product W will be always = CO.

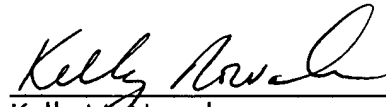
Applicants continue to submit that the linear polymers of the invention are more stable than those disclosed in Galbiati. Again, the polymers disclosed in Galbiati have the inconvenience of the solid products obtained therefrom show a high sensitivity to oxidation by atmospheric oxygen, which is increased by UV light and high temperatures. In order to solve this problem, antioxidants and/or UV stabilizers are added to Galbiati's polymers before inducing cross-linking. However, after a certain period of time, these solid products having the antioxidants and/or UV stabilizers are still modified by oxidation and show cracks on their surfaces.

On the contrary, the compound of the present invention, under the same conditions, does not show any visible sign of degradation.

For the reasons set forth above, applicants submit that the claims of the instant invention include limitations not disclosed nor contemplated by Galbiati such that Galbiati does not anticipate nor render obvious the instant invention.

It is respectfully submitted that the application has been brought into a condition where an allowance of the case is proper. Reconsideration of claims 17-30, and issuance of a Notice of Allowance are respectfully solicited. Should the Examiner not find the claims to be allowable, Applicant's attorney respectfully requests that the Examiner call the undersigned to clarify any issue and/or to place the case in condition for allow

Respectfully submitted,


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